

I claim:

- 1  
1 1. A system for use in a well, comprising:  
2 at least one wireless network device in the well.
- 1 2. The system of claim 1, further comprising:  
2 a plurality of wireless network devices in the well.
- 1 3. The system of claim 1, further comprising:  
2 an interlink wireless network device positioned proximal the surface of the well;  
3 a communication line interconnecting the interlink wireless network device to a surface  
4 controller.
- 1 4. The system of claim 1, further comprising:  
2 the at least one wireless network device communicating with a downhole device.
- 1 5. The system of claim 4, wherein the downhole device is selected from gauges, sensors,  
2 valves, sampling devices, a device used in intelligent or smart well completion,  
3 temperature sensors, pressure sensors, flow-control devices, flow rate measurement  
4 devices, oil/water/gas ratio measurement devices, scale detectors, actuators, locks, release

mechanisms, equipment sensors (e.g., vibration sensors), sand detection sensors, water detection sensors, data recorders, viscosity sensors, density sensors, bubble point sensors, composition sensors, resistivity array devices and sensors, acoustic devices and sensors, other telemetry devices, near infrared sensors, gamma ray detectors, H<sub>2</sub>S detectors, CO<sub>2</sub> detectors, downhole memory units, downhole controllers, perforating devices, shape charges, firing heads, and locators.

6. The system of claim 1, further comprising:  
the at least one wireless network device is in communication with a power source.

7. The system of claim 6, wherein the power source is selected from a battery, a fuel cell, a downhole power generator, and a communication line extending to a surface of the well.

8. The system of claim 1, further comprising:  
at least one wireless network device positioned in a lateral branch of a multilateral well.

9. The system of claim 1, further comprising:  
a first wireless network device positioned in a lateral branch of a multilateral well;  
a second wireless network device positioned outside the lateral branch in the well;  
the first wireless network device and second wireless network device positioned within  
range of one another.

10. The system of claim 1, further comprising:

2 a wireless network device in a wellhead of the well.

1 11. The system of claim 10, further comprising:

2 a wireless network device outside the well adapted to communicate with the at least one  
3 wireless network device in the wellhead.

1 12. The system of claim 10, further comprising:

2 the wireless network device in the wellhead adapted to communicate with the at least one  
3 wireless network device in the well.

1 13. The system of claim 10, further comprising:

2 a communication line in communication with the wireless network device in the  
3 wellhead.

1 14. The system of claim 1, further comprising:

2 a wireless network device outside the well adapted to communicate with the at least one  
3 wireless network device in the well.

1 15. The system of claim 10, further comprising:

2 a communication line in communication with the wireless network device outside the  
3 well.

1 16. The system of claim 1, further comprising at least one secondary communication system

2 in communication with the at least one wireless network device.

1 17. The system of claim 16, wherein the secondary communication system is selected from  
2 communication line, a fiber optic line, an Internet, a satellite, a telephone system, and an  
3 intranet.

1 18. The system of claim 16, wherein the at least one secondary communication system  
2 provides communication between the at least one wireless network device and a location  
3 selected from a remote land-based location and an offshore surface location.

1 19. The system of claim 1, further comprising:  
2 a first wireless network device positioned outside a casing in the well;  
3 a second wireless network device positioned inside the casing of the well;  
4 the first wireless network device and the second wireless network device adapted to  
5 communicate with one another.

1 20. The system of claim 19, further comprising:  
2 a memory device communicating with the first wireless network device.

1 21. The system of claim 19, wherein:  
2 the second wireless network device is mounted in the well.

1 22. The system of claim 19, further comprising:

2 the second wireless network device is provided on a running tool.

1 23. The system of claim 1, further comprising:

2 a first wireless network device positioned outside a tubing in the well;

3 a second wireless network device positioned inside the tubing of the well;

4 the first wireless network device and the second wireless network device adapted to

5 communicate with one another.

1 24. The system of claim 23, further comprising:

2 a memory device communicating with the first wireless network device.

1 25. The system of claim 23, wherein:

2 the second wireless network device is mounted in the well.

1 26. The system of claim 23, further comprising:

2 the second wireless network device is provided on a tool.

1 27. The system of claim 26, wherein:

2 the tool has a memory device therein.

1 28. The system of claim 23, further comprising:

2 at least a portion of the tubing extends through a casing in the well;

3 a third wireless network device positioned inside the casing of the well;

4 the first wireless network device, the second wireless network device, and the third  
5 wireless network device are adapted to communicate with one another.

1 29. The system of claim 28, wherein:  
2 the first wireless network device relays information between the second wireless network  
3 device and the third wireless network device.

1 30. The system of claim 1, further comprising:  
2 a tool having a wireless network device.

1 31. The system of claim 30, wherein:  
2 the at least one wireless network device in the well located at a predetermined position  
3 therein;  
4 a depth correlation circuitry in the tool is in communication with the wireless network  
5 device in the tool and is adapted to detect a signal from the connected wireless  
6 network device and determine the depth of the tool in the well therefrom.

1 32. The system of claim 31, further comprising:  
2 a plurality of wireless network devices in the well;  
3 the tool detects the signal of at least two of the plurality of wireless network devices to  
4 determine the depth of the tool.

1 33. The system of claim 31, further comprising:

a plurality of wireless network devices in the well;  
the tool detects the signal of at least three of the plurality of wireless network devices to  
triangulate the depth of the tool.

34. The system of claim 30, wherein:  
the at least one wireless network device in the well located at a predetermined position  
therein;  
an actuation circuitry in the tool is in communication with the wireless network device in  
the tool and is adapted to detect a signal from the connected wireless network  
device and actuate the tool.

35. The system of claim 34, wherein:  
the actuation circuitry provides a firing command to a perforating gun.

36. The system of claim 34, wherein:  
the actuation circuitry provides an actuating command to a valve.

37. The system of claim 34, wherein:  
the actuation circuitry provides an actuating command to a release.

38. The system of claim 34, wherein:  
the actuation circuitry provides an actuating command to a recorder.

- 1 39. A method for use in a well, comprising:  
2 providing a wireless network device in well.
- 1 40. The method of claim 39, further comprising:  
2 providing a plurality of wireless network devices in the well.
- 1 41. The method of claim 39, further comprising:  
2 communicating with a downhole device via the wireless network device.
- 1 42. The method of claim 39, further comprising:  
2 powering the wireless network device with a downhole power source.
- 1 43. The method of claim 39, further comprising:  
2 telemetering data in a multilateral well using the wireless network device.
- 1 44. The method of claim 39, further comprising:  
2 telemetering data from the well to a position outside the well using the wireless network  
3 device.
- 1 45. The method of claim 39, further comprising:  
2 telemetering data from through a casing using the wireless network device.
- 1 46. The method of claim 39, further comprising:



2 telemetering data from through a tubing using the wireless network device.

1 47. The method of claim 19, further comprising:

2 storing information downhole;

3 transferring the stored information to running tool via the wireless network device.

1 48. The method of claim 30, further comprising:

2 determining the depth of a tool in the well using the wireless network device.

1 49. The method of claim 30, wherein:

2 actuating a tool in the well using the wireless network device.

1 50. A telemetry system for a well, comprising:

2 a plurality of wireless network devices in the well.

1 51. A system for use in a well, comprising:

2 a first device positioned in the well;

3 a second device remotely located with respect to the first device;

4 means for transferring data between the first device and the second device using short-

5 range wireless communication operating without the need for a central network.

1 52. A subsea networking system, comprising:

2 a wireless network device positioned in a subsea structure;

a subsea vehicle having a wireless network device therein that is adapted to communicate with the wireless network device positioned in the subsea structure.

53. The method of claim 52, wherein:

the subsea structure is selected from a wellhead, a subsea processing device, a power generation device and a subsea monitor.

54. The method of claim 52, wherein:

the subsea vehicle is selected from an ROV and a AUV.

55. A subsea telemetry system, comprising:

a wireless network device positioned proximal the sea floor;  
a subsea vehicle having a wireless network device therein that is adapted to communicate with the wireless network device positioned proximal the sea floor.

56. The system of claim 55, further comprising:

a guidance circuitry of the subsea vehicle in communication with the wireless network device of the subsea vehicle, the guidance circuitry adapted to determine the relative position of the subsea vehicle based upon input from the interconnected wireless network device.